

REMARKS

Reconsideration and allowance of this application are requested in view of the above amendment and the following discussion.

The present invention provides measurement of tension, vibration, temperature variations on the inside of a workpiece so that, as claimed, the optical fiber is integrated into the surface, or bonded to the surface of the workpiece. This feature is not shown by Ames. Additionally each of independent claims 1 and 12 recite the integration of the fibers 11-18 into recesses 31-38 in the surface of the workpiece. Neither Ames nor the references cited in the IDS's of August 25, 2003 or March 19, 2004 have these claimed features.

Claims 1-2, 5-13, 15-20 have been rejected under 35 USC 103 as unpatentable over the previously cited Ames patent (US 6,774,354). Applicants traverse this rejection on the grounds that each of independent claims 1 and 12 contain subject matter not shown, disclosed or made obvious by Ames or any other cited but not applied references.

Claims 1 and 12 require the optical fibers 11-18 to be "integrated in the surface of the workpiece" 10 and recesses 31-38 which are "introduced into the surface of the workpiece". Ames has a pitch sensor where the relative movement of the mass 16 (workpiece) being measured in relation to the cage 14 by Bragg sensors. As a result the optical fibers of Bragg are fixed to the cage 14 and must not be fixed (integrated) on the surface of the workpiece so that tension can be

generated in the optical fibers at gratings. If the optical fibres were bonded to the mass, tension would occur in the optical fibers at a location between the mass and the cage. Therefore in Ames the optical fibers must be mounted so as to be movable relative to the mass (workpiece). The optical fibers do not measure the tension on the surface of the mass or the cage.

The present invention in contrast provides an arrangement for measuring tension in the surface of a workpiece. The tension resulting from vibration, temperature changes or load in the surface are induced into the optical fibers which must be integrated into the surface.

Accordingly, not only does Ames fail to disclose the presently claimed invention but Ames also provides a disclosure which would not function if modified to meet the claim limitations of the present invention as defined by independent claims 1 and 12 and the dependent claims 2, 5-11, 13 and 15-20 which depend from and contain all the limitations of either claim 1 or claim 12.

It is further noted that the Ames reference is similar to GB 2 136 119, a copy of which is attached as a courtesy. The '119 reference, similar to Ames, shows optical fibers 4 disposed in grooves 3 located on the body 2 but neither the fibers nor the grooves are integrated on the surface of the structure (workpiece) 5 as is required by the above discussed presently claimed invention. The '119 reference is seen as merely cumulative of the Ames reference. According to 37 CFR 1.56(b) information is material to patentability when it is not cumulative.

The attach drawing of Fig. 1 now illustrated the recesses 31-38 for the optical fibers 11-18. The appropriate number insertion has been made to the specification. No new matter or new issues are raised by this change. Claim 9 has been amended to eliminate the objectionable grammar markings.

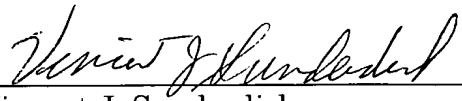
Therefore allowance of this application is requested in view of the claimed features which are not available from the references and which are not obvious from the references.

If there are any questions regarding this response or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket # 011235.52686US).

Respectfully submitted,

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AMENDMENTS TO THE DRAWINGS:

The attached new sheet of drawings includes changes to Fig.1.